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ABSTRACT

The extent and distribution of self-reported learning activities in the current Canadian adult population was estimated on the basis of data collected during a 1998 telephone survey of a sample of 1,562 Canadian adults. Random digital dialing was used to give all provinces, households, and individuals within households an equal chance of selection. The response rate was 64% of all eligible households. The interviews averaged 32 minutes, and the data were weighted by known population characteristics of age, sex, and educational attainment to ensure profiles representative for Canada as a whole. More than 95% of those interviewed were involved in some form of explicit informal learning activities that they considered significant. On average, respondents devoted approximately 15 hours per week to informal learning (versus the Canadian average of approximately 4 hours per week to organized education courses). The most commonly cited areas of informal learning activities were as follows: computer skills related to employment; communications skills through voluntary community volunteer work; home renovations and cooking skills in household work; and general interest learning about health issues. It was recommended that those shaping Canada's educational, economic, and other social policies give more explicit consideration to Canadian adults' mostly informal learning practices. (Contains 29 references) (MN)

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EXPLORING THE ICEBERGS OF ADULT LEARNING: FINDINGS OF THE FIRST CANADIAN SURVEY OF INFORMAL LEARNING PRACTICES

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*Revised version of a paper presented at the annual meetings of the American Educational Research Association, Montreal, April 20, 1999. The survey was conducted as part of the SSHRC-funded research network on New Approaches to Lifelong Learning (NALL). A version of this paper was also presented at a joint session of the Canadian Association for the Study of Adult Education and the Canadian Society for the Study of Education, Sherbrooke, Quebec, June 12, 1999. I would like to thank the members of NALL for assistance with questionnaire design, the Institute for Social Research at York University for administering the survey and David Northrup of the ISR for extensive advice in its development, Doug Hart for conducting the computer-based analyses, and Cheryl Williams and Jill Given-King for text formatting. Further information about NALL, this national survey and various related case studies may be found at the NALL website: http://nall.oise.utoronto.ca.

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EXPLORING THE ICEBERGS OF ADULT LEARNING: FINDINGS OF THE FIRST CANADIAN SURVEY OF INFORMAL LEARNING PRACTICES[1]

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Abstract

This paper provides empirical estimates of the extent and distribution of self-reported learning activities in the current Canadian adult population, based on a recent country-wide survey, and briefly addresses some implications of these adult learning patterns. The basic finding from the survey is that most Canadian adults are spending a great deal and increasing amount of time in learning activities, most of this in informal learning on their own. The major implications are that Canada is already and increasingly a knowledge society in any reasonable sense of the term and that Canadian adults' mostly informal learning practices should more explicitly be taken into account in shaping educational, economic and other social policies; adult educators should take this detectable informal learning into greater account to develop more responsive further education opportunities.

There is a great deal of talk these days about living in the "information age", "the "knowledge society" or the "learning society." The study described in this article indicates that adults in Canada now spend an average of 15 hours per week on informal learning. In light of this finding, if the crews of our big education and training ships do not increasingly look out for the massive, detectable icebergs of informal learning, many of their programs may sink into Titanic irrelevancy. However, before the survey findings are presented, informal learning should be distinguished from other basic sites of adult learning and the difficulties involved in studying informal learning should be identified.

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[1]Funding for the survey was provided by the Social Sciences and Humanities Research Council of Canada (SSHRC). A prior version of this paper was presented at the 18th annual meeting of the Canadian Association for the Study of Adult Education, Sherbrooke, Quebec, June 12, 1999.

The Informal-Learning-Research Context

Sites of Adult Learning

Three basic sites of adult learning are formal schooling, further education, and informal learning (see Coombs, 1985; Selman & Dampier, 1991). *Formal schooling* is an age-graded, hierarchically organized, formally constituted system; it often includes compulsory attendance until at least mid-adolescence; and it provides the major credentialing programs to certify one's knowledge competencies for starting one's adult lives--these programs extend increasingly into the adult years with university and postgraduate schooling.

Further education refers to all other organized educational activities, including further courses, training programs, and workshops offered by any social institution. Typically, these are individual courses offered to adults on a part-time, short-term basis, and often voluntarily chosen. However, the increasing incidence of transitions back and forth between schooling on the one hand and paid work on the other, as well as part-time education and part-time employment combinations are blurring the distinction between schooling and further education (see Thomas, 1993). An important feature of both types of organized education is that participation is pyramidal: those who have more schooling continue to get more adult education (see Livingstone, 1999, pp. 12-33). This expanding educational pyramid is what academics and policy makers now usually refer to when they discuss "lifelong learning", the "knowledge society" and the like. Nevertheless, beneath this visible educational pyramid, and usually ignored, unrecognized or taken for granted as simply day-to-day getting by, there are various other learning activities that constitute a huge submerged iceberg of informal learning.

Informal learning is any activity involving the pursuit of understanding, knowledge or skill which occurs outside the curricula of educational institutions, or the courses or workshops offered by educational or social agencies. The basic terms of informal learning (e.g., objectives, content, means and processes of acquisition, duration, evaluation of outcomes, applications) are determined by the individuals and groups that choose to engage in it. Informal learning is undertaken on one's own, either individually or collectively, without either externally imposed criteria or the presence of an institutionally authorized instructor.

Explicit informal learning is distinguished from everyday perceptions, general socialization and other tacit learning by peoples' conscious identification of the activity as significant learning. The important criteria that distinguish explicit informal learning are the retrospective recognition of both a new significant form of knowledge, understanding or skill acquired on one's own initiative and also recognition of the process of acquisition. This guideline distinguishes explicit informal learning from all of the other tacit forms of learning through everyday activities. Examples of tacit learning include experiences of young people or adults when their elders or peers engage with them in many forms of socialization that are not recognized as learning because they are so incorporated in other activities, such as ceremonial occasions or the various ad hoc day-to-day interrelationships through which people are inducted into the cultural life of their society. In basic socialization, learning and acting constitute a seamless web in which it is impossible to distinguish informal learning activities in any discrete way. This provides a diffuse boundary on the informal side of the continuum of learning. Self-reported estimates of informal learning are used to identify what is recognized as discrete informal learning by individuals. Such reports may very substantially underestimate the total

amount of informal learning that people do because of the embedded and taken-for-granted character of their tacit learning. Eraut (1999) concludes after an extensive review of research on workplace learning:

> "Thick" tacit versions of personal knowledge co-exist with "thin" explicit versions: the thick version is used in practice, the thin version for describing and justifying that practice.... [T]he limitations to making tacit knowledge explicit are formidable, and much of the discussion about it in the literature is ill-informed if not naive. (pp. 36, 40)

To study informal learning empirically, educators have to focus on those things that people can identify for themselves as actual learning projects or deliberate learning activities beyond educational institutions.

Origins of This Survey and Challenges of Researching Informal Learning

The National Research Network on New Approaches to Lifelong Learning (NALL) centred at the Ontario Institute for Studies in Education of the University of Toronto (OISE/UT) developed this survey as part of its efforts to identify the extent of adult learning, the existence of social barriers to learning, and more effective means of linking learning with work. The NALL survey of adults' current learning is the first large-scale survey in this country and the most extensive one anywhere to attend to the full array of adults' learning activities, including not only schooling and continuing education courses but also informal learning that occurs outside organized education. In the first phase of this study, a representative telephone survey of 1562 Canadian adults was conducted for NALL between June 6 and November 8, 1998 by the Institute

for Social Research at York University. This survey asked respondents to talk about informal learning *from their own standpoints.*

NALL researchers reviewed and borrowed from virtually all prior studies of informal learning that have previously been conducted (see Adams et al, 1999). We did extensive pilot testing with dozens of individuals and groups. The final interview schedule[2] addresses all three basic sites of learning, with a special focus on the diverse aspects of explicit informal learning; a variety of social background factors are also addressed.

This research on informal learning draws upon Knowles' (1970) ideas of andragogy. Knowles argued that every individual is involved in continual learning activities and that these activities or projects, which are beyond the realm of institutional control, are integral to the constituting of society. This perspective inspired the empirical research on self-directed learning projects initiated by Tough (1971, 1978, 1979). Much of the early research Tough reports was done in the Toronto area, starting with graduate students who did case studies with various small groups.

Large numbers of case studies have now been done to document the actual self-directed learning activities in which people generally engage (see Adams et al, 1999). Several U.S. surveys of informal learning have been conducted, including a 1976 national survey (Penland, 1976; see also Livingstone, 1999, pp. 33-51). At least one national Canadian survey has addressed the content of adults' self-directed learning about social issues (Thomas et al., 1982). The cumulative findings in Canada and internationally in the 1970s were that the vast majority of

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[2]Those interested in reviewing or responding to the full interview schedule can find it at the NALL website: http://nall.oise.utoronto.ca.

social groups (whether distinguished by gender, age, class, race, ableism, or nationality) showed very similar distributions in the basic amount of time that people spend on major learning projects. The average number of hours devoted to informal learning of this explicitly recognized sort was around 10 hours a week or 500 hours a year (see Tough 1978).

This corpus of work was subjected to at least three major criticisms: individualistic bias, dominant class bias, and leading question bias (see Brookfield, 1981). The *individualistic bias* is the implicit assumption that people learn most of what they learn individually rather than in collective or relational context. Thus, early empirical research focussed on individual respondents and documented their self-directed learning projects. But the collective aspects of informal learning--the social engagement with others--is an integral part of any actual knowledge acquisition process, as leading general theories of learning now clearly acknowledge (see Engestrom, Miettinen and Punamaki, 1999). Collectively conducted learning processes are the least well documented part of adults' informal learning. The individualistic bias can be partially overcome by research methods that either engage with people in the social contexts of their lives (such as participant observation), or by questioning them collectively (as in discussion groups of various kinds). Even the individual interview methods required for a large-scale survey can more explicitly address the social relational aspects of respondents' learning activities. The NALL survey did this by asking several questions on collective learning processes and preferred styles of collective or individual learning.

The *dominant class bias* charge emerged because the vast majority of the early research was conduced with white, middle-aged, professional-managerial people and younger university students. Sufficient research has now been done with cross-sections of less affluent classes,

visible minority groups, and seniors to support the preliminary conclusions that Tough (1978) made about self-directed learning being fairly common in its incidence across most social groups (see Adams et al., 1999). The dominant group bias surely can be more fully addressed with greater sensitivity and respect for other standpoints by further in-depth studies that document the informal learning of working class and underclass people, women, people of various sexual orientations, visible minorities, disabled people, and older and younger generations. The NALL survey was pilot tested extensively with representatives of subordinate social groups to try to ensure its general accessibility and further in-depth case studies are in progress.

In the enthusiasm of the early empirical research in the self-directed learning tradition, there was often a tendency toward *leading questions*, in the sense of "of course you do informal learning, don't you" and "what is it?", rather than simply asking people whether or not they do it, and taking what they say as valid. The basic procedure was for the interviewer to react skeptically to responses that denied any significant informal learning, and then proceed with a series of probes to ferret out actual informal learning projects (Tough, 1979). The genuine difficulty here is that researchers do have to engage in a probing process precisely because most people do not recognize much of the informal learning they do until they have a chance to reflect on it. Later research studies have been less leading, including a growing tradition of situated learning case studies that have confirmed the extensiveness of informal learning activities through direct observation (e.g. Lave and Wenger, 1991). The NALL survey gave respondents numerous thematic cues based on prior empirical studies but accepted all responses as given without further probing.

Other major challenges include recognizing *incidentally-initiated* learning, *irregularly timed* learning, and the distinction between learning *processes* and learning *outcomes*. The predominance of planned learning may be clear enough in schooling decisions, but people can do informal learning any time, any where, with anyone. Although it can be planned in a very deliberate a priori way, it can be situationally stimulated with no prior intent. Many informal learning activities that result in the accomplishment of new knowledge, understanding, or skill begin in an ad hoc, incidental manner and are are only consciously recognized after the fact (see Eraut, 1999). Retrospective views of the amount of time spent in incidentally-initiated informal learning processes are likely to remain very approximate underestimates.

Informal learning never ends. But much of it occurs in irregular time and space patterns. One can learn life-course shaping or influencing knowledge at any place and within a very short period of time, in a moment of perspective transformation (Mezirow, 1991) or an organizing circumstance (Spear, 1988). Much of the most important learning adults do occurs in these moments of transition (whether it happens to be a birth, death, marriage, divorce, transition between careers or locations, or some other major influential event) which provoke a concentrated period of informal learning. The most significant informal learning continues to occur in these irregular, intense moments of people's lives (see Merriam and Clark, 1995).

The amount of time that people spend in learning processes is not necessarily positively correlated with successful learning outcomes. A less capable learner may have to spend considerably more time to achieve a successful outcome. Much of the research to date on informal learning focuses on documenting the processes that people are involved in, the amount of time that they engage in these processes, and their particular substantive areas of learning.

Very little of this research addresses the question of the actual competencies that people have gained from their informal learning activities. This is at least partially because many of the criteria of successful informal learning are themselves informally determined. No external authority can pose an inclusive set of criteria about either the curriculum that should be learned or satisfactory levels of achievement, let alone ensure intersubjectively meaningful comparisons between informal learning outcomes. So, the initial recourse, here again, is to self-recognition: What have learners accomplished through informal learning activities that they perceive as significant?

These key limitations of studying informal learning are challenges that the researchers in this survey faced. We are under no illusion that a survey questionnaire will be capable of uncovering the deeper levels of either individual or collective knowledge gained in informal learning practices (a more in-depth follow-up survey is also in preparation). But in this article I aim to generate useful profiles of the basic patterns of the incidence of explicit informal learning and to examine their association with organized forms of education more fully than most prior studies, and thereby contribute to more nuanced appreciation of the multiple dimensions and relationships of the learning continuum. Such measures can at least provide benchmarks for understanding the extent and changing patterns of informal learning activities.

Findings from the First Canadian Survey of Informal Learning Practices

The NALL survey sample includes adults 18 and over, who speak English or French, reside in a private home (not an old age, group home, penal, or educational institution), with a telephone. All provinces, households, and individuals within households were given an equal chance of selection using random digit dialling. The average telephone interview time was 32

minutes. Efforts to maximize response rate included extensive call-backs at different times of day when necessary: 24% of the interviews were complete on the first call; 54% completed within 2 further call-backs; 76% completed within 6 total calls; 97% in 14 or less calls; the final 3% took between 14 and 28 calls. The response rate was 64% of the eligible households. The data presented here are weighted by known population characteristics of age, sex, and educational attainment to ensure profiles that are representative for Canada as a whole. A summary of the basic findings follows, with reference to prior studies where relevant for comparative purposes.

Formal Educational Attainment

Participation in all forms of schooling has increased dramatically in Canada over the past two generations. High school completion has continued to increase to the point that only 15% of current youth cohorts are not obtaining a high school diploma either through continuous enrolment or after "stopping out." Post-secondary enrolments have grown rapidly, particularly since the creation of community colleges in the 1960s. Total enrolment in colleges and universities expressed in relation to the 20-24 age cohort has increased from 7% in 1950 to 35% in 1970, 96% in 1990, and has continued to fluctuate upward. These statistics should not be taken to suggest that virtually all of those in the 20 to 24 age cohort are now enrolled in post-secondary institutions. The rapidly increasing percentages indicate both the increasing post- secondary participation rate of this cohort per se and also the increasing participation of both younger and much older people in post-secondary education. In fact, the actual participation of the 20 to 24 cohort almost doubled, from 17% to 33%, between 1981 and 1996 (see Betcherman, McMullen and Davidman, 1998). These participation rates are now among the highest in the world (UNESCO, 1997). The aggregate educational attainment of the active labour force has increased

accordingly. For example, the proportion of the Ontario labour force without a high school diploma dropped from nearly half in the late 1970s to about a quarter in the mid 1990s (see Livingstone, 1999, Tables 1.2 and 1.4). However, in terms of the "cradle to grave" perspective, Canada still has one of the lowest pre-school participation rates of three and four-year-olds among advanced industrial countries (OECD, 1998, p. 20).

According to the 1996 Canada Census (Statistics Canada, 1998), only about 12% of the over 18 population had elementary schooling or less; 22% had some secondary schooling; 16% had completed secondary school; the other half of the population had some form of post-secondary experience, including over 18% with community college diplomas and 14% with university degrees. The 1998 NALL survey drew somewhat higher response rates from those with post-secondary certification (40% versus 33% in the 1996 census). As noted above, the NALL sample results have been weighted by census distributions to adjust for the underrepresentation of the less highly schooled, as well as for slight imbalances in specific age and sex groups. Such adjustments are made in virtually all sample surveys. However, the underrepresentation of the less schooled is notably less than in most surveys. For example, 22% of the NALL survey respondents had not completed secondary school. For comparison, the proportion who had not completed secondary school in a recent OISE/UT survey of educational issues was 12% (see Livingstone, et al., 1999, p. 88). Perhaps this greater response from the less formallt advocated occurred partly because the NALL interview begins with informal learning activities, with which virtually all respondents with little schooling have had some positive recent direct experience. In any case, all further findings reported here are for a sample that is representative of actual population educational attainments.

Participation in Further Education

The annual participation rate in adult further education courses in Canada circa 1960 was about 4% of the entire adult population. By the early 1990s, it was about 30% (see Livingstone, 1999, Table 1.6). So within a period of 30 years or so there was an increase in adult course participation rates by a factor of more than 7. But this participation level remained lower than those in many European countries (see Belanger and Tuijnman, 1997).

The basic question in the 1998 NALL survey on further education participation is comparable to that of Statistics Canada's Adult Education and Training Survey (Statistics Canada, 1998, p. 3). The NALL wording is: "In the last year have you taken any kind of formal organized courses, workshops or lessons no matter how long or short?" The basic finding is that participation in adult education and training courses and workshops continues to grow. Popular demand for greater future provision of further education courses is even stronger. As Table 1 summarizes: over 40 percent of all Canadian adults have taken some kind of course, workshop or training sessions in the past year. For future plans and interest to enrol in further education, the general disposition to participate is even higher: (a) over half are planning to take some sort of formally organized courses in the next few years and (b) over 60% say they would be more likely to enroll in an educational program if they could get formal acknowledgement for their past learning experiences and therefore have to take fewer courses to finish the program. There is widespread popular support for greater use of prior learning assessment and recognition (PLAR).

Table 1

Canadian Adults' Participation in Further Education, 1998

Schooling	Taken adult ed course or workshop past year (%)	Plan to take course (%)	More likely to enrol if PLAR* (%)
No diploma	18	28	53
High school diploma	52	46	71
Community college	58	62	71
University degree	67	70	60
Total	44	54	61

*Prior Learning Assessment and Recognition

Table 1 also confirms that the historical tendency for those with higher levels of schooling to participate more highly in further education continues.However, the further education gap is narrowing, as greater proportions graduate from high school and continue to post-secondary schooling. The majority of adults with at least a high school diploma are now enrolling in some kind of further education course or workshop annually, but less than a quarter of those without a diploma are enrolling. Future planning for further education courses shows similar tendencies. But, as Table 1 also suggests, this gap would probably be much smaller if prior learning assessment and recognition were widely implemented. There is majority support in nearly all schooling levels for PLAR, but it would make a greater difference for the least formally educated. Almost twice as many school dropouts as currently plan to take future courses say they would be more likely to enrol if they could receive recognition for their prior

informal learning. PLAR is therefore a very important potential means of more effectively valuing the informal learning of the less highly schooled.

The claim that large and growing numbers of Canadian adults have insufficient learning skills to engage effectively in either continuing education or the contemporary knowledge society finds little support among the general public. As Table 2 summarizes, over 80% of the adult population rate their own reading skills as either "excellent" or "good." Those with the lowest reading skill levels are definitely less likely to participate in further education courses, but only 3% rate their reading skills as "poor," and low ratings are least likely among younger people. Other recent studies using more objective measures of literacy skills have also found little support for the argument that Canadians have declining literacy skills. The 1994 national survey of literacy skills which included actual tests of reading abilities found that younger Canadians are much less likely to have "low literacy skills" than older people--44% of those over 55 years of age versus only 13% of those under 35 (Statistics Canada/OECD, 1995, p. 79). Only a small and diminishing minority of Canadian adults appear to have significant really reading difficulties. Moreover, as Table 2 also shows, even the vast majority of the small minority of Canadians with low reading skills are at least adequately qualified for their jobs (cf. Livingstone, 1999, pp. 42-51).

Table 2
Self-Rating of Reading Skills by Further Education Participation and Self-Rating of Job Qualification, Canadian Adults, 1998

Reading skills (%)	Further education course last year (%)	At least adequately qualified for job (%)
Excellent (46)	58	97
Good (39)	36	95
Moderate (12)	23	92
Poor (3)	10	67
Total (100)	44	95

The NALL survey also found that even among the minority who did not plan to participate in further education courses, less than 10% mentioned poor prior school performance as a reason. So, only a tiny percentage of Canadian adults are not participating in further education courses because of perceived lack of learning capability. Over 20% feel they have no need for such courses. However, there are major material barriers to course participation for many of the over 40% who do not plan to participate in the near future. Nearly half of these people say they have no time to participate; about 40% say that courses are at inconvenient times or places; almost 40% cite family responsibilities; and about one-third indicate that courses are too expensive. This is consistent with findings by McEwan (1998).

In summary, the data on participation indicate that nearly half of all Canadian adults are now actively engaged in taking further education and training courses or other forms of continuing education, a majority are planning to take further education courses in the near future, and even more would do so if their prior learning achievements were recognized. Most Canadian

adults believe they have quite sufficient learning skills to engage in further education courses if they wanted to do so, but many of those who would like to participate in further education face serious institutional or personal constraints on doing so.

Types of Informal Learning Activities

The NALL survey confirms that most adults' detectable individual and collective learning is comparable to an iceberg--mostly invisible at the surface and immense in its mostly submerged informal aspects. The survey assessed participation in four aspects of informal learning: employment related, community volunteer work related, household work related, and other general interest related. In each aspect, respondents were asked about informal learning activities on several specific themes.

These questions were developed to replicate as closely as possible the content of the Tough (1971) and Penland (1977) interview schedules, with appropriate revisions for changing circumstances (e.g., computer-based learning). The wording of the general introduction and immediately following employment-related question were:

> Everybody does some informal learning outside of formal classes or organized programs. You may spend a little time or a lot of time at it. It includes anything you do to gain knowledge, skill or understanding from learning about your health or hobbies, household tasks or paid work, or anything else that interests you. Please begin to think about any informal learning you have done during the last year outside of formal or organized courses.
>
> First, let's talk about any informal learning activities outside of courses that have some connection with your current or possible future paid employment. This could be

any learning you did on your own or in groups with co-workers, that is, any informal learning you consider to be related to your employment.

Respondents were then asked to consider the following list: new general knowledge in their occupation; new job task; computers; other new technologies or equipment; supervisory or management skills; team work, problem solving, or communication skills; employee rights and benefits; occupational health and safety; literacy and numeracy skills; another language; and any other employment-related informal learning activities.

In subsequent sections of the interview schedule, respondents were asked about informal learning related to community work (including fund-raising; organizational or managerial skills; social issues; communication skills; interpersonal skills; other technical skills; other skills or knowledge); to household work (including home maintenance; home cooking; cleaning; child or elder care; shopping for groceries, clothes, etc.; home renovation and gardening; home budgetting; other household tasks); and to other, general interests (including sports or recreation; practical skills; cultural traditions or customs; leisure or hobby skills; social skills and personal development; health and well being; finances; computers or computer skills; langauge skills; science and technology; intimate relationships; religion or spirituality; environmental issues; pet care; public and political issues; other informal learning not directly related to employment, community activities or housework). The basic findings were as follow.

Employment-related informal learning. Those in the current labour force or expecting to be soon (about 2/3 of the total sample) averaged about 6 hours a week in informal learning related to their current or prospective future employment. The most common learning activities included: (a) about 3/4 engaged in informal learning projects to keep up with new general

knowledge in job/career; (b) almost 2/3 were involved in informal employment-related computer learning; (c) about 2/3 were learning new job tasks; (d) about 2/3 were learning problem solving/communication skills; (e) over half were learning about occupational health and safety; and (f) almost half were learning other new technologies.

Community volunteer work-related informal learning. Those who have been involved in community work over past year (over 40%) devoted about 4 hours a week on average to community-related informal learning. The most common learning activities included: (a) about 2/3 were learning interpersonal skills; (b) almost 60% were learning communication skills; (c) over half were learning about social issues; and (d) over 40% were learning about organizational/managerial skills.

Household work-related informal learning. Those involved in household work over the past year (about 80%) averaged about 5 hours per week in informal learning related to their household work. The most common learning activities included: (a) over 60% were involved in learning about home renovations and gardening; (b) nearly 60% were learning home cooking; and (c) over half were learning home maintenance.

Other general interest informal learning. Most people engaged in some other types of informal learning related to their general interests. Those who were doing so (around 90%) spent on average about 6 hours a week on these learning activities. The most common ones were: (a) 3/4 of respondents were involved in learning about health and well being; (b) about 60% were involved in learning about environmental issues; (c) about 60% were involved in learning about finances; and (d) over half were engaging in informal learning activities around hobby skills, social skills, public issues, computers, sports, and recreation.

Total involvement in informal learning. Nearly all Canadian adults (over 95%) are involved in some form of explicit informal learning activities that they can identify as significant. When asked which of these learning activities are most important to them in the respective areas, Canadians' most common responses in the NALL survey were: computer skills related to employment, communications skills through community volunteer work, home renovations and cooking skills in household work, and general interest learning about health issues.

The survey provides estimates of the amount of time that all Canadians--including those who say they do no informal learning at all--are spending in all four areas (employment, community, household, and general interest). The average number of hours devoted to informal learning activities by all Canadian adults over the past year was around 15 hours per week. *This is vastly more time than Canadian adults are spending in organized education courses* (an average of around 4 hours per week for the entire population). The iceberg metaphor for detectable adult learning is not exact but close enough.--an iceberg is approximately 90% invisible, adult learning approximately 80% informal.

This finding is higher than prior Canadian case studies and U.S. surveys of self-directed learning activities in the 1970s, which found averages of 10 hours or less per week (see Livingstone, 1999, Table 1.7 p. 36). More recent Ontario surveys which contain comparable items have found that the incidence of informal learning activities increased from 12 to 15 hours between 1996 and 1998 (Livingstone, Hart and Davie, 1999). Direct comparisons between case studies and surveys may be misleading because case studies have much greater opportunities to probe and allow respondents to reflect and recall more informal learning experiences. But recent case studies have also found the estimated incidence of informal learning activities to be greater

than the 1970s case studies (Livingstone and Sawchuk, 1999). Although measuring the iceberg of explicit informal learning remains an elusive task, the available evidence suggests that the amount of time adults are devoting to such informal learning has increased in recent years.

There is great variation in the total amount of informal learning that Canadian adults say they are now doing, as Table 3 illustrates. However, as Table 4 illustrates, those with the least schooling appear to be devoting at least as much time on average to most forms of informal learning as those with higher levels of schooling. Clearly, the overwhelming majority of Canadian adults are now spending a significant and recognizable amount of time regularly in these pursuits.

Table 3
Distribution of Total Weekly Hours of Informal Learning, Canadian Adults, 1998

Hours/week	%
0	4
1-5	21
6-10	25
11-20	25
21+	25
N	1562

Prior studies of informal learning have found more variation within most social groupings (such as age, sex, level of schooling, income, ethnic groups) than between them (Tough, 1979). The current survey also finds this general pattern across most of these social groups as well as

occupational classes, with the notable exception of the generational differences discussed in the implications section.

Table 4 Incidence of Informal Learning by Level of Schooling, Canada, 1998

Level of schooling	Avg. hours per week of informal learning
No diploma	16
High school diploma	15
Community college	15
University degree	14
Total	15

This lack of difference across major social groups is an extremely important finding for comprehending the full character of Canada as a knowledge society. Anyone can engage in informal learning on his or her own volition and schedule, and apparently people in the most socially disadvantaged statuses are just as likely to do so as those in the most socially dominant positions. The submerged informal part of the iceberg of detectable adult learning does not have the same hierarchical structure as the pyramid of organized education. We are really still at the "ether stage" of understanding the processes and outcomes of informal learning, with little comprehension of their internal dynamics (see Engestrom, Miettinen and Punamaki, 1999; Thomas, 1991). But case studies of the actual learning practices of adults with limited formal education-- such as recent ethnographic research in the situated learning theory tradition (e.g.

Lave and Wenger, 1991)--strongly suggest that much of this learning involves quite high levels of skill competency. Much as it contradicts the dominant meritocratic ideology of the modern "credential society," the less schooled appear in many instances and significant dimensions of knowledge to be at least as competent as the more highly schooled.

Implications of the Findings

The Transmission of "Really Useful Knowledge" Through the Adult Life Course

If the hidden part of the iceberg of adult learning is so wide and deep, surely it must have important connections with the visible pyramid of participation in education that appears to float above it. Given the very rudimentary understanding of the processes and outcomes of adult informal learning, there has to date been virtually no substantial research on these interrelationships (see Livingstone, 1999, pp. 236-240). The NALL survey provides some basic clues confirming common sense expectations about the intergenerational dynamics of these relations.

As many prior surveys have found and Table 5 reconfirms, there is a very strong relationship between age and level of participation in further education courses. Two-thirds of Canadian adults under 24 participated in a further education course or workshop last year, whereas only 10% of those over 65 did so. Those under 24 also indicated that they spent more time in informal learning than older adults. Entry into adulthood is probably the period of most intense and extensive new organizing circumstances in all spheres of most peoples' lives, especially within advanced industrial societies; this organizing often includes initial career choices, major household and community choices not governed by parental authority, and generally establishing one's own life style. Young adults are not only the most likely to take

further education courses to aid in these transitions, they are also most likely to rely more on organized courses rather than their own independent informal efforts in their learning activities, with nearly three-quarters indicating a preference for courses over informal learning. But, clearly, younger adults are doing a lot of informal learning as well as a lot of formal courses.

Table 5
Adult Education Course Participation, Preferred Form of Learning, and Average Hours of Informal Learning per Week, Canadian Adults, 1998

	Course participation	Preferred Form of Learning		Informal hours per week
		Courses	On own	
Age group	(%)	(%)	(%)	(hours)
18-24	67	73	22	23
25-34	54	48	37	16
35-44	54	47	40	15
45-54	46	38	50	15
55-64	25	22	63	12
65+	10	19	64	12
Total	44	44	44	15

However, as Table 5 also indicates, aging is not very significantly associated with decline in the incidence of informal learning beyond the intense period of entry into adulthood. Contrary to the stereotype of older adults' active interests rapidly diminishing as they approach and enter their retirement years, the survey findings suggest that they spend nearly as much time on informal learning activities as middle-aged adults. Although further education course participation does drop off rapidly, this is not primarily because of declining interest in learning activities but because adults increasingly replace course participation with their own independent

informal learning efforts. The older people are, the more likely they are to rely on their own prior learning experiences as a guide for further learning.

Furthermore, the older people are, the more likely they are to be looked to by others as a source of these other persons' learning. Elders in advanced industrial societies get relatively little respect compared to many communally-based societies, but younger people nonetheless rely heavily on elder people's experiential knowledge. Table 6 indicates the major tendencies in important sources of job-related knowledge in the current Canadian labour force. The majority of adults under 24 rely on older co-workers for their most important workplace knowledge. The majority of those over 45 rely primarily on independent learning efforts drawing on their own experience. Employer-sponsored job training programs remain a marginal component in workers' employment centered knowledge throughout their job careers. In this regard, the NALL survey confirms earlier international studies which have consistently found that over 70 % of the knowledge individuals acquire about their jobs is gained through informal learning (see Livingstone, 1999, pp. 38-42). The major source of job-related knowledge is definitely older workers teaching younger ones informally. This collective informal learning should be more fully recognized as vital to the reproduction of the labour force.

Just as with employment-related learning, the vast majority of all learning throughout the adult life course probably occurs informally. Effective reproduction of most really useful knowledge involves older people handing on their informal knowledge to younger people. Pyramidally organized education and training systems need to become more responsive to these pathways of informal learning in order to aid effective linkages between education and the various spheres of paid and unpaid work. The OECD's (1998) "new approach to lifelong

learning" asserts: "The systemic approach puts a special responsibility on providers to recognize linkages to other sectors of provision and to what is happening in society more generally" (p. 9) Neither the OECD nor most other educational policy authorities yet appear to have much real appreciation of the vast amount of informal learning that is happening in society more generally.

Table 6
Most Important Source of Job Knowledge by Age, Canadian Labour Force, 1998

	Most important source of job knowledge			
	Co-workers	Independent efforts	Employer training	Combinations
Age group	(%)	(%)	(%)	(%)
18-24	52	26	12	9
25-34	32	36	17	16
35-44	21	47	20	12
45-54	20	53	13	14
55-64	9	66	12	13
Total	28	44	15	13

Lifelong Learning and Underemployment in a Class Society

At least during the current generation, the rapidly increasing amount of formal schooling and further education that people engage in, coupled with their vast and increasing amount of informal learning, have exceeded the collective capacity of capitalist market economies to provide sufficient commensurate sorts of jobs in which members of the potential labour force can apply their employment-related knowledge. Canada may have a knowledge society but not yet a "knowledge-based economy" (see Livingstone, 1999). Table 7 offers some indication of the

situation in Canada in terms of the self-perceptions of survey respondents in the current labour force.

Table 7
Self-Rating of Job Qualifications by Length of Time to Learn Your Job, Canadian Labour Force, 1998

Time to learn job	Self-rating of job qualifications		
	Over-qualified	Adequately qualified	Under-qualified
(%)	(%)	(%)	(%)
Few days (9%)	51	45	4
Several weeks (9%)	28	72	0
Few months (11%)	27	72	1
Less than year(14%)	25	70	5
1-3 years (20%)	17	80	3
3+ years (32%)	11	84	5
Depends on person (5%)	7	93	0
All	21	76	3

About half of the employed Canadian labour force believe that it would take someone with the same formal education as they have a year or more to become fully skilled at their job. About a quarter think their jobs could be mastered in a few months or less. But regardless of the perceived difficulty of their jobs, the overwhelming majority of Canadian workers feel they are at least adequately qualified for their jobs. Very few think that they are underqualified and about seven times as many believe they are overqualified. Among those whose jobs only require a few days to learn, the majority think they are overqualified. But even among those with jobs that take over 3 years to master, only 5% feel underqualified and twice as many think they are

overqualified. This is just one indicator among many (see Livingstone, 1999, pp. 52-132) that Canadian workers' formal and informal learning is being substantially underemployed in current paid workplaces.

In spite of widespread conditions of underemployment of current knowledge in current paid workplaces, there is very substantial unfulfilled demand for access to further education courses among the less affluent. A large and increasing majority of people now regard an advanced education as very important to get along in society (Livingstone et al, 1999). Access to further education programs is the institutional key to responding to adult demand for knowledge. But, as Table 8 summarizes, the differences between actual and desired participation in further education courses vary greatly between occupational classes in the active labour force. (For emprically grounded discussions of the differences between these occupational classes in Canadian society, see Livingstone & Mangan, 1996).

Table 8
Schooling, Further Education, Interest in PLAR Credit and Incidence of Informal Learning by Occupational Class, Canadaian Labour Force, 1998

Occupational class	University degree (%)	Course/ workshop last year (%)	Interest in courses if PLAR (%)	Informal learning (hrs/week)
Corporate executives	70	71	61	17
Small employers	40	52	58	16
Self-employed	28	52	69	14
Managers	52	72	62	13
Professionals	76	76	69	15
Service workers	12	54	73	17

Industrial workers	8	37	73	17
Unemployed	16	38	82	20
Total	26	50	70	15

Class differences in the incidence of different types of adult learning activities confirm the existence of a massive egalitarian informal learning society hidden beneath the pyramidal class structured forms of schooling and further education. The incidence of informal learning among wageworkers and the unemployed is at least as great as among more affluent and highly schooled classes. Corporate executives, managers, and professional employees have much higher levels of formal schooling than working class people. They are also more likely to have participated in further education courses or workshops last year, even though the class differences here are much smaller. However, the more affluent classes are not more likely than the working classes to want to take courses if working class people receive recognition for their prior learning. The gap between current and desired participation is very large for working class people and virtually non-existent for more affluent class groups. The survey findings suggest that a pent-up demand for responsive further education courses among the less affluent may have been as much ignored as their extensive informal learning activities.

Concluding Remarks

The 1998 NALL survey is one of the very few country-level empirical profiles of the full spectrum of adult learning activities that has been generated to date. Building most directly on the prior research of Tough (1979) and Penland (1977) on self-directed learning, this survey provides benchmarks of the incidence, thematic contents, and processes of explicit informal

learning; of the relations between informal learning and formal schooling and further education; and of the relations of all these learning activities with the social background of Canadian adults. The NALL research network is currently conducting a series of related in-depth case studies. Future Canada-wide surveys may permit assessment of continuing trends in the informal as well as institutionally-based learning activities of adults. But several preliminary conclusions are warranted.

Adults' explicit informal learning is very extensive. Virtually all Canadian adults are active learners and very little of this learning is registered through specific education and training courses. Much of the individual and collective adult informal learning that this survey documents had previously been unrecognized by the respondents themselves. Surely 15 hours a week is a significant amount of time to devote to any activity. The collective recognition of this informal learning and its occurrence across the life course can lead to people more fully valuing both their own learning capacities and those of other social groups. By recognizing the amount of informal learning they are doing, ordinary people can begin to identify connections among the learning activities in which they are involved with their workmates, families, and community members. Furthermore, they can be more articulate with trade union leadership, with employers, and with government policymakers about what kinds of learning programs should be developed and should be offered to link to the competencies and interests that are already there, rather than just accepting more unilaterally-established training provisions. Informal learning research can enable governments, trade unions, and employers to become more responsive to the interests and receptivities of the workforce for different forms of educational programs. In short, with such

data, learning needs can be more fully and effectively problematized and strategized in terms of needs for whom, for what, and from what standpoint.

It should also be clear from these findings that the knowledge society includes the extensive informal knowledge of many people who have been excluded from advanced forms of organized education in the past, most notably older people and the working classes. The centrality of their tacit knowledge to the production and reproduction of society has typically been unrecognized both by others and by these people themselves. There is, however, a very strong current demand among less formally educated people to have their prior learning more fully recognized by educational institutions. For prior learning recognition to be effective, it must entail more than advanced credit for entry into established education and training programs. The contributions of working class experts and other elders who have mastered relevant bodies of informal knowledge should be included in curriculum development to ensure the responsiveness of such programs. Although participatory pedagogy may be a general principle of adult education, the very strong current demand for prior learning recognition among the previously excluded underlines the necessity of directly involving knowledgeable elders of these groups in designing relevant educational and training programs.

The very limited participation in further education of the small minority with poor reading skills is indicative of the growing centrality of dominant language facility for gaining certification in other technical skills or, in the case of immigrants, for applying already acquired technical skills. Further analysis of the NALL data indicates that those with self-rated poor reading skills tend to spend considerably more time in informal learning activities than those with greater reading facility. Many of these people with low levels of dominant language literacy

itemize multiple other useful skills in their survey responses, skills which they should be enabled to apply widely. But without enhanced dominant language skills they are likely to be increasingly excluded from equitable participation in an increasingly symbolic information-dominated society. Even though low literacy is a diminishing problem, the development of more responsive basic literacy programs to ensure their dominant language competency should therefore continue to be given high educational priority.

The overall findings support the view that skill shortages in specific areas are exceptions that prove the general rule of the *underemployment* of the existing pool of formal and informal knowledge and skill in paid workplaces. Specific skill supply gaps continue to emerge and short-term training programs should be mounted to fill them. But greater emphasis should be placed on developing new collaborative programs involving employers, governments, and local community groups to carefully identify actual local pools of knowledge and skills, local possibilities for greater employee participation in their enterprises, new forms of work in the community, and other means of matching people's underused skills and knowledge with local economic needs.

More knowledge should always be welcomed. However, the basic resolution to the problem of underemployment cannot come through more education and training, but through economic reforms--such as wider employee ownership, greater workplace democracy, more equitable distribution of available paid employment and recognition of new forms of compensable work (Livingstone, 1999, pp. 240-275) which allow fuller application of people's currently attained knowledge. The most important economic role that adult educators can perform is to actively participate in the development and dissemination of accurate profiles of the current and most likely future types of local jobs/careers/new forms of paid work to which

unemployed and underemployed people can constructively direct their already very impressive learning capacities. The many recent calls for more instrumental training programs to respond to the requirements of an imminent "knowledge-based economy" have the problem backwards. Canadian adults generally have unprecedented levels of education and informal knowledge, but they need better jobs in which to apply their knowledge.

The profiles of the detectable informal part of the icebergs of adult learning offered by the NALL survey may assist those concerned to make fuller connections with further education programs, with all spheres of work and with related social policy issues. But the much larger sea of tacit adult learning remains unfathomed. The exploration of the massive area of detectable informal learning beneath the iceberg cap of visible institutional adult learning and the icebergs' movements in this sea has only begun.

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